

CLAIMS

1. A device for the concentric chucking of rotatably drivable parts, comprising:

a housing comprising a bore for receiving a part;

a rotary drive for driving said housing about a rotary axis;

a first set of at least three clamping units arranged radially within said housing for clamping said part;

a second set of at least three clamping units arranged radially within said housing for clamping said part, said first set being axially offset from said second set;

actuators provided on at least two of said clamping units of said first set and on at least two of said clamping units of said second set, said actuators being configured for radially adjusting said part;

a measuring device comprising two measuring pick-ups, arranged axially offset relative to one another for sampling said part when said housing is driven about said rotary axis to generate output data indicative for deviations of said part from concentricity with respect to said rotary axis;

a computing device coupled with said measuring pick-ups for receiving said output data and for computing control data there from, said control data being input to said actuators for automatically controlling said actuators to radially adjust said part to effect concentricity of said part with respect to said rotary axis avoiding couple unbalances and parallel unbalances.

2. The device of claim 1, wherein said clamping units are arranged within said housing around said bore at equal angular spacings one from the other.

3. The device of claim 1, wherein said actuators comprise radially adjustable plungers.

4. The device of claim 3, wherein one of said clamping units comprises a radially drivable plunger.

5. The device of claim 1, wherein said actuators comprise at least one element for radially adjusting said plunger, said element being selected from the group formed by a setscrew and a servo-drive.

6. The device of claim 1, comprising a chuck for chucking said part within a central chucking bore thereof, said chuck having an outer surface received within said bore of said housing.

7. The device of claim 1, wherein each of said actuators comprises a stepping motor for driving said actuator.

8. A device for the concentric chucking of rotatingly drivable parts, comprising:

a housing comprising a bore for receiving a part;
a rotary drive for driving said housing about a rotary axis;

a first set of at least three clamping units arranged radially within said housing for clamping said part;

a second set of at least three clamping units arranged radially within said housing for clamping said part, said first set being axially offset from said second set;

actuators provided on at least two of said clamping units of said first set and on at least two of said clamping units of said second set, said actuators being configured for radially adjusting said part;

a measuring device comprising two measuring pick-ups, arranged axially offset relative to one another for sampling said part when said housing is driven about said rotary axis to generate output data indicative for deviations of said part from concentricity with respect to said rotary axis;

a computing device coupled with said measuring pick-ups for receiving said output data and for computing control data there from, said control data being input to said actuators for controlling said actuators to radially adjust said part to effect concentricity of said part with respect to said rotary axis.

9. The device of claim 1, wherein said computing device is configured for generating control data for radially adjusting said part avoiding couple unbalances and parallel unbalances.

10. The device of claim 8, wherein said computing device is configured for generating control data for radially adjusting said part avoiding couple unbalance and parallel unbalance.

11. The device of claim 7, wherein said clamping units are arranged within said housing around said bore at equal angular spacings one from the other.

12. The device of claim 7, wherein said actuators comprise radially adjustable plungers.

13. The device of claim 10, wherein one of said clamping units comprises a radially drivable plunger.

14. The device of claim 10, wherein said actuators comprise at least one element for radially adjusting said plunger, said element being selected from the group formed by a setscrew and a servo-drive.

15. The device of claim 7, wherein each of said actuators means comprises a differential thread having two threads of different pitches, a difference of travel between said two threads being converted to an actuator travel value for radial adjustment.

16. The device of claim 11, wherein said clamping unit comprises a spring urging said plunger inwardly in radial direction.

17. The device of claim 8, comprising a chuck for chucking said part within a central chucking bore thereof, said chuck having an outer surface received within said bore of said housing.

18. The device of claim 8, wherein said actuators are controlled by said computing device for automatically adjusting said actuators to effect concentricity of said part.

19. The device of claim 3, wherein each of said actuators comprises a stepping motor for driving said actuator.

20. A device for the concentric chucking of rotatingly drivable parts, comprising:

a housing comprising a bore for receiving a part;

a rotary drive for driving said housing about a rotary axis;

at least three clamping units arranged radially within said housing for clamping said part;

actuators provided on at least two of said clamping units, said actuators being arranged for radially adjusting said part;

a measuring device comprising two measuring pick-ups, arranged axially offset relative to one another for sampling said part when said housing is driven about said rotary axis to generate output data indicative for deviations of said part from concentricity with respect to said rotary axis;

a computing device coupled with said measuring pick-ups for receiving said output data and for computing control data there from, said control data being input to said actuators for controlling said actuators to radially adjust said part to effect concentricity of said part with respect to said rotary axis.